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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/664,967	09/22/2003	Dae-Il Kim	1293.1960	4979
21171	7590	02/07/2005	EXAMINER	
STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			OLSON, JASON C	
			ART UNIT	PAPER NUMBER
			2651	

DATE MAILED: 02/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/664,967

Applicant(s)

KIM ET AL.

Examiner

Jason C Olson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7-13 is/are allowed.
- 6) ☒ Claim(s) 1, 4 and 6 is/are rejected.
- 7) ☒ Claim(s) 2, 3 and 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/06/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art and Koenig et al. (US 6,381,086), hereinafter Koenig.

Regarding claims 1 and 6, the applicant's admitted prior art teaches receiving a write command (see page 2, paragraph 5), measuring an ambient temperature of a hard disc drive and determining whether the ambient temperature exceeds a threshold temperature (see page 2, paragraph 5), if the ambient temperature exceeds the threshold temperature, adjusting the intensity of a write current according to the position of a magnetic head of the hard disc drive (see page 2, paragraph 7); and applying the adjusted write current intensity to the magnetic head (see page 2, paragraph 7). The applicant's admitted prior art fails to explicitly teach if an overshooting value of the write current exceeds a predetermined steady-state value, adjusting the overshooting value of the write current, and applying the adjusted overshooting value to the magnetic head, however, Koenig is relied upon to teach if an overshooting value of the write current exceeds a predetermined steady-state value (see col. 2, ln. 45-50 and figure 1, item 12 and "overshoot"; it is interpreted by the examiner that by definition, an overshoot value of the write current is one that exceeds a steady-state value), adjusting the overshooting value of the

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write current (col. 3, ln. 59-col. 4, ln. 6), and applying the adjusted overshooting value to the magnetic head (see col. 4, ln. 7-16). It would have been obvious to one of ordinary skill in the art at the time the invention was made to improve upon current control to the head of the applicant's admitted prior art by applying the teaching of controlling the overshoot in the write current to the head as taught by Koenig for the purpose as described in column 1, line 60-column 2, line 11 of Koenig.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art and Suzuki et al. (US 6,798,598), hereinafter Suzuki.

Regarding claim 4, the applicant's admitted prior art teaches a temperature sensor that receives a write command and measures an ambient temperature of a hard disc drive (see page 2, paragraph 5); a controller that controls intensity of an overshooting value of the write current depending on the sensed ambient temperature of the hard disc drive and the position of the magnetic head (see page 2, paragraph 7); and a write driver that supplies the write current having the adjusted overshooting value to the magnetic head (see page 2, paragraph 7). The applicant's admitted prior art fails to explicitly teach controlling the intensity of a write current depending on a sensed ambient temperature of the hard disc drive and the position of the magnetic head; and a write driver that supplies the write current having the adjusted value to the magnetic head, however, Suzuki is relied upon to teach controlling the intensity of a write current depending on a sensed ambient temperature of the hard disc drive and the position of the magnetic head and a write driver that supplies the write current having the adjusted value to the magnetic head (see col. 7, ln. 56-col. 8, ln. 16). It would have been obvious to one of ordinary skill in the art at the

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time the invention was made to improve upon current control to the head of the applicant's admitted prior art by applying the teaching of controlling the write current based on temperature and head position as taught by Suzuki for the purpose as described in column 1, line 48-line 67 of Suzuki.

Allowable Subject Matter

Claims 7-13 are allowed. The prior art fails to teach alone or in combination a memory device storing a predetermined threshold value and a threshold overshooting value a temperature sensor device sensing a temperature of the hard disc drive, wherein if the sensed temperature exceeds the predetermined threshold value, the controller device determines a position of the magnetic disc head and adjusts the intensity of the write current; and wherein if the overshooting value of the write current exceeds the threshold overshooting value, the controller device adjusts the overshooting value of the write current.

Claims 2, 3, and 5 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Jen et al. (US 6,405,277) is cited for writing data to a storage device in a relatively cold or hot environment. Lacombe (US 6,496,317) is cited for accurate adjustable current overshoot circuit. Tsukagoshi, Shinichiro (JP 05258215 A) is cited for a writing current

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switching circuit. Okamoto, Yutaka (JP 63167404 A) is cited for recording system for signal of magnetic recorder. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason C Olson whose telephone number is (571) 272-7560. The examiner can normally be reached on Monday thru Thursday 7:30-5:30; alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Hudspeth can be reached on (571) 272-7842. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JCO
January 31, 2005


DAVID HUDSPETH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600